

Listing of Claims:

1. (previously presented) An implantable medical electrical lead, comprising:
 - an elongated body terminating at the distal end with an end wall and including a proximal end, a distal end, a conductor extending from the proximal end toward the distal end, and an insulative sheath; and
 - an electrode at the distal end of the elongated body adapted for stimulating myocardial tissue via intimate contact with a surface of the electrode, the electrode including:
 - a conductive structure defining a closed cavity distal of the distal end wall of the elongated body and being electrically coupled to the conductor, the cavity being enclosed within a first electrode surface;
 - an insulative housing around the conductive structure and having a port that circumscribes a second electrode surface;
 - an ionically conductive fluid medium filling the cavity and being in intimate contact with the first electrode surface; and
 - an insulated helical fixation member coupled to the insulative housing and extending distally therefrom;
 - wherein, when a current is delivered, via the conductor, to the electrode surface contained within the cavity, a first current density is generated at the first electrode surface and a second current density is generated at the second electrode surface, the first current density being smaller than the second current density; and
 - when the helical fixation member is engaged in tissue, the second electrode surface forms a high impedance and low polarization tissue-stimulating electrode.
2. (canceled)
3. (previously presented) The lead of claim 1, wherein the second electrode surface is approximately flush with the port.

4. (previously presented) The lead of claim 1, wherein the second electrode surface protrudes from the port.

5. (previously presented) The lead of claim 4, wherein the second electrode surface is adapted to pierce tissue when the helical fixation member is engaged in tissue.

6. (cancelled)

7. (previously presented) The lead of claim 1, wherein the conductive structure formed within it the cavity comprises a proximal extension of the helical fixation member.

8. (previously presented) The lead of claim 1, wherein the conductive structure comprises a stud joining the helical fixation member to the conductor.

9. (previously presented) The lead of claim 1, wherein the port of the insulative housing has a cross-sectional area between approximately 0.1 square millimeters and 4.0 square millimeters.

10. (previously presented) The lead of claim 1, wherein the first electrode surface of the conductive structure is approximately greater than or equal to approximately 10 square millimeters.

11. (canceled)

12. (previously presented) The lead of claim 11, wherein the helical fixation member includes an un-insulated zone forming a third electrode surface distal from the port.

13. (canceled)

14. (previously presented) The lead of claim 1, wherein the ionically conductive medium filling the cavity comprises a hydrogel.

15. (previously presented) The lead of claim 1, wherein the ionically conductive medium filling the cavity comprises a saline solution.

16. (previously presented) The lead of claim 1, wherein the helical fixation member is retractable into the insulative housing and extendable therefrom.

17. (previously presented) The lead of claim 1, wherein the electrode surface of the conductive structure comprises platinum black particles.

18. (previously presented) The lead of claim 1, wherein the conductive structure comprises an iridium-oxide.

19. (previously presented) The lead of claim 1, wherein the conductive structure comprises a ruthenium-oxide.

20. (previously presented) The lead of claim 1, wherein the conductive structure comprises titanium-nitride.

21. (previously presented) The lead of claim 1, further comprising a steroid-loaded MCRD formed about the insulative housing in proximity to the port.

22. (previously presented) The lead of claim 1, wherein the insulated helical fixation member comprises an oxide-coated tantalum.

23. (currently amended) An implantable medical electrical lead, comprising:

an elongated body including a proximal end, a distal end, and a conductor extending from the proximal end toward the distal end; and

an electrode at the distal end of the elongated body adapted for pacing myocardial tissue via intimate contact with a surface of the electrode, the electrode including:

~~means, when a current is delivered via the conductor to the electrode,~~ for producing a first current density at a first electrode surface and a second current density at a second electrode surface, when a current is delivered via the conductor to the electrode, wherein the first current density ~~being~~ is smaller than the second current density so that the second electrode surface forms a high impedance and low polarization stimulating electrode.

24. (currently amended) The lead of claim 23, wherein the ~~current density generating~~ means for producing a first current density at a first electrode surface and a second current density at a second electrode surface comprises:

a conductive structure defining a closed cavity distally of distal end wall of the elongated body and electrically coupled to the conductor, the cavity being enclosed by a first electrode surface;

an insulative housing overlaying the conductive structure and having a port to circumscribe a second electrode surface; and

an ionically conductive fluid medium filling the cavity in intimate contact with the first electrode surface.

25. (previously presented) The lead of claim 24, wherein the second electrode surface area protrudes from the port.

26. (canceled)

27. (previously presented) The lead of claim 24, wherein the second electrode surface of the conductive structure has a surface area between approximately 0.1 square millimeters and 4.0 square millimeters.

28. (previously presented) The lead of claim 24, wherein the first electrode surface of the conductive structure is approximately greater than or equal to approximately 10 square millimeters.

29. (previously presented) The lead of claim 24, wherein the ionically conductive medium filling the cavity comprises a hydrogel.

30. (previously presented) The lead of claim 24, wherein the ionically conductive medium filling the cavity comprises a saline solution.

31. (previously presented) The lead of claim 24, wherein the first electrode surface of the conductive structure comprises platinum black particles.

32. (previously presented) The lead of claim 24, wherein the first electrode surface of the conductive structure comprises an iridium-oxide.

33. (previously presented) The lead of claim 24, wherein the first electrode surface of the conductive structure comprises a ruthenium-oxide.

34. (previously presented) The lead of claim 24, wherein the first electrode surface of the conductive structure comprises titanium-nitride.

35. (previously presented) The lead of claim 24, further comprising a steroid-loaded MCRD formed about the insulative housing in proximity to the port.